

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Claims 1-81 (Canceled)

82. (New) An optical module for generating an electronic image of a relief object, comprising:
 - a transparent substrate layer having a top surface and a bottom surface;
 - a detector layer being a plurality of photosensitive detectors disposed on said top surface of said transparent substrate layer;
 - a light source layer in contact with said bottom surface of said transparent substrate layer, said light source layer comprising a means for emitting light through and illuminating said transparent substrate layer and said detector layer, and illuminating a relief object in contact with a top surface of the optical module with scattered light; and
 - a means for generating an electronic image of the relief object wherein light is randomly reflected through said transparent substrate layer and said detector layer from said light source layer such that when the relief object is in contact with the optical module, said scattered light emitted from said light source layer is randomly reflected in a cavity formed between a valley of the relief object and said detector layer, and one or more of said photosensitive detectors in said detector layer detects said randomly reflected light and generates a photocurrent thereby creating the electronic image of the relief object.
83. (New) The optical module according to claim 82, further comprising a means for making a top surface of said detector layer a planar top surface.
84. (New) The optical module according to claim 83, wherein said means for making a top surface of said detector layer a planar top surface comprises a planarization layer on said top surface of said detector layer.

85. (New) The optical module according to claim 84 wherein said planarization layer is made of a transparent dielectric insulating material.
86. (New) The optical module according to claim 85, wherein said transparent dielectric insulating material is selected from a group consisting of: benzocyclobutene (BCB), acrylic, and polyimide.
87. (New) The optical module according to claim 84, wherein said planarization layer has a thickness of about 1 μm and 2 μm .
88. (New) The optical module according to claim 84, further comprising a means for discharging static charge from the relief object in contact with said top surface of the optical module.
89. (New) The optical module according to claim 88, wherein said means for discharging static charge is a discharging layer on said planarization layer, said discharging layer being a transparent electrically conducting material.
90. (New) The optical module according to claim 89, wherein said discharging layer has a thickness of about 1000 \AA .
91. (New) The optical module according to claim 89, wherein said discharging layer covers said planarization layer in its entirety.
92. (New) The optical module according to claim 89, wherein said discharging layer comprises a plurality of stripes positioned in parallel across said planarization layer, each said stripe being said transparent electrically conducting material.
93. (New) The optical module according to claim 89, wherein said transparent electrically conducting material is an indium tin oxide (ITO).

94. (New) The optical module according to claim 82, wherein said means for emitting light through and illuminating said transparent substrate layer and said detector layer is selected from the group consisting of: an electroluminescent device, one or more light emitting diodes (LEDs), an organic electroluminescent light source, an organic electroluminescent material, a light emitting polymer, an inorganic electroluminescent material, an electroluminescent panel, and a backlight device.
95. (New) The optical module according to claim 82, wherein said means for emitting light through and illuminating said transparent substrate layer and said detector layer further comprises a power supply connected to one or more electrodes in communication with said light source layer.
96. (New) The optical module according to claim 82, wherein said plurality of photosensitive detectors are arranged in a matrix pattern of one or more rows and one or more columns.
97. (New) The optical module according to claim 82, wherein each of said plurality of photosensitive detectors is selected from the group consisting of: photodiodes, and photosensitive transistors.
98. (New) The optical module according to claim 82, further comprising a reflector layer covering a bottom surface of said light source layer for reflecting light emitting from said light source layer back into said light source layer.
99. (New) The optical module according to claim 98, wherein said reflector layer is a layer of reflecting material on said bottom surface of said light source layer, said reflecting material selected from the group consisting of: aluminum, chromium, molybdenum, gold, silver, copper, and alloys containing said reflecting material.
100. (New) The optical module according to claim 98, further comprising an insulation layer covering said reflector layer.

101. (New) The optical module according to claim 100, wherein said insulation layer is selected from the group consisting of: a polymer, a polyester, and polyethylene.
102. (New) The optical module according to claim 82, wherein the relief object is a fingerprint.
103. (New) An optical module for generating an electronic image of a relief object, comprising:
 - a transparent substrate layer having a top surface and a bottom surface;
 - a detector layer having a top surface, said detector layer being a plurality of photosensitive detectors disposed on said top surface of said transparent substrate layer;
 - a planarization layer on said top surface of said detector layer providing a planar top surface of said detector layer;
 - a discharging layer on said planarization layer having a means for discharging static charge from a relief object in contact with a top surface of the optical module to ground, said discharging layer being a transparent electrically conducting material;
 - a light source layer in contact with said bottom surface of said transparent substrate layer, said light source layer comprising a means for emitting light through and illuminating said transparent substrate layer, said detector layer, said planarization layer, and said discharging layer, and illuminating the relief object with scattered light; and
 - a means for generating an electronic image of the relief object, wherein light is randomly emitted from said light source layer such that when the relief object is in contact with the optical module, said scattered light emitted from said light source layer is randomly reflected in a cavity formed between a valley of the relief object and said discharging layer, and one or more of said photosensitive detectors in said detector layer detects said randomly reflected light and generates a photocurrent thereby creating the electronic image of the relief object.
104. (New) The optical module according to claim 103 wherein said planarization layer is made of a transparent dielectric insulating material.

105. (New) The optical module according to claim 104, wherein said transparent dielectric insulating material is selected from a group consisting of: benzocyclobutene (BCB), acrylic, and polyimide.
106. (New) The optical module according to claim 103, wherein said planarization layer has a thickness of about 1 μm and 2 μm .
107. (New) The optical module according to claim 103, wherein said discharging layer has a thickness of about 1000 \AA .
108. (New) The optical module according to claim 103, wherein said discharging layer covers said planarization layer in its entirety.
109. (New) The optical module according to claim 103, wherein said discharging layer comprises a plurality of stripes positioned in parallel across said planarization layer, each said stripe being said transparent electrically conducting material.
110. (New) The optical module according to claim 103, wherein said transparent electrically conducting material is an indium tin oxide (ITO).
111. (New) The optical module according to claim 103, wherein said means for emitting light through and illuminating is selected from the group consisting of: an electroluminescent device, one or more light emitting diodes (LEDs), an organic electroluminescent light source, an organic electroluminescent material, a light emitting polymer, an inorganic electroluminescent material, an electroluminescent panel, and a backlight device.
112. (New) The optical module according to claim 103, wherein said means for emitting light through and illuminating further comprises a power supply connected to one or more electrodes in communication with said light source layer.

113. (New) The optical module according to claim 103, wherein said plurality of photosensitive detectors are arranged in a matrix pattern of one or more rows and one or more columns.
114. (New) The optical module according to claim 103, wherein each of said plurality of photosensitive detectors is selected from the group consisting of: photodiodes, and photosensitive transistors.
115. (New) The optical module according to claim 103, further comprising a reflector layer covering a bottom surface of said light source layer for reflecting light emitting from said light source layer back into said light source layer.
116. (New) The optical module according to claim 115, wherein said reflector layer is a layer of reflecting material on said bottom surface of said light source layer, said reflecting material selected from the group consisting of: aluminum, chromium, molybdenum, gold, silver, copper, and alloys containing said reflecting material.
117. (New) The optical module according to claim 115, further comprising an insulation layer covering said reflector layer.
118. (New) The optical module according to claim 117, wherein said insulation layer is selected from the group consisting of: a polymer, a polyester, and polyethylene.
119. (New) The optical module according to claim 103, wherein the relief object is a fingerprint.
120. (New) An optical module for generating an electronic image of a relief object, comprising:
 - a transparent substrate layer having a top surface and a bottom surface;
 - a detector layer being a plurality of photosensitive detectors disposed on said top surface of said transparent substrate layer;

a means for discharging static charge from a relief object in contact with a top surface of the optical module;

a light source layer in contact with said bottom surface of said transparent substrate layer, said light source layer comprising a means for emitting light through and illuminating said transparent substrate layer, said detector layer, and said means for discharging static charge, and illumination the relief object with scattered light;

a means for generating an electronic image of the relief object, wherein light is randomly emitted from said light source layer such that when the relief object is in contact with the top surface of the optical module, said scattered light emitted from said light source layer is randomly reflected in a cavity formed between a valley of the relief object and the top surface of the optical module and one or more of said photosensitive detectors in said detector layer detects said randomly reflected light and generates a photocurrent thereby creating the electronic image of the relief object.

121. (New) The optical module according to claim 120, wherein said means for emitting light through and illuminating is selected from the group consisting of: an electroluminescent device, one or more light emitting diodes (LEDs), an organic electroluminescent light source, an organic electroluminescent material, a light emitting polymer, an inorganic electroluminescent material, an electroluminescent panel, and a backlight device.
122. (New) The optical module according to claim 120, wherein said means for emitting light through and illuminating further comprises a power supply connected to one or more electrodes in communication with said light source layer.
123. (New) The optical module according to claim 120, wherein said plurality of photosensitive detectors are arranged in a matrix pattern of one or more rows and one or more columns.
124. (New) The optical module according to claim 120, wherein each of said plurality of photosensitive detectors is selected from the group consisting of: photodiodes, and photosensitive transistors.

125. (New) The optical module according to claim 120, further comprising a reflector layer covering a bottom surface of said light source layer for reflecting light emitting from said light source layer back into said light source layer.
126. (New) The optical module according to claim 125, wherein said reflector layer is a layer of reflecting material on said bottom surface of said light source layer, said reflecting material selected from the group consisting of: aluminum, chromium, molybdenum, gold, silver, copper, and alloys containing said reflecting material.
127. (New) The optical module according to claim 125, further comprising an insulation layer covering said reflector layer.
128. (New) The optical module according to claim 127, wherein said insulation layer is selected from the group consisting of: a polymer, a polyester, and polyethylene.
129. (New) The optical module according to claim 120, wherein the relief object is a fingerprint.